

## PERSONAL

Surname	:	Kraan
Name	:	Stefan
Home address	:	Mausrevagh, Kilcoona, Headford, Co. Galway, Ireland
Phone (w)	:	
Email	:	
Place of birth	:	
Date of birth	:	
Nationality	:	Dutch



## EDUCATION

1984 - 1988: **H.dip Biological Technology, Laboratory Technology College, Amsterdam**, The Netherlands with specialization in Aquatic and Marine Ecology.

1989- 1993: **M.Sc. Marine Biology, Groningen University, Faculty of Sciences**, with specialization in: Tropical Ecology; Aquatic Ecology; Oceanography; Marine Biology; Marine Ecosystems; Animal Ecology; Microbial Ecology; Ethology; Geology; Population genetics; Animal Physiology; Introduction Pelagic & Abyssal; Biogeographical dispersion of marine fauna.

1997-2000: **PhD. Marine Botany, National University of Ireland Galway**, Aquaculture and molecular biology of the edible brown seaweed *Alaria esculenta*

## EXPERIENCE

1987 - 1988: **Centre for Estuarine and Coastal Ecology of The Netherlands Institute of Ecology, Yerseke** Eco-toxicological researcher of edible winkles. Practical experience with LC-50 tests, determination of heavy metals and stress factors like glycogen, proteins, enzyme activity and free amino acids utilizing high performance liquid chromatography.

1990: **Groningen University**, field and laboratory researcher of rest metabolism and oxygen-consumption, functional morphology, behavioral spawning and time budgeting of fish; Dynamics of phyto- and zooplankton populations. Practical experiences with several assay techniques and catch and capture methods.

1991: **Groningen University**, field and laboratory researcher of stocktaking of freshwater lakes and ponds, bio-monitoring of the Eastern Scheldt and biogeographically dispersal of macro-algae. Practical experience with culturing of seaweeds, determination of the life cycle and growth rate, statistical data analyses and processing.

1992: **Saba Marine Park and Bonaire Marine Park**, ecological researcher on herbivorous fish populations on a reef flat (social structure, food acquirement, population development, reproduction and larva culture). Nature conservation co-worker and policy co-worker of the Saba Marine park.

1993: **Groningen University, marine botany co-worker of this research group involved in age determination of parrotfish by means of otoliths, using electron microscopy.**

1993 - 1994: **Research and Advice Agency Orca Aquatic Ecosystems, Groningen**, consultant and policy co-worker for environmental impact assessment.

1994: **Independent Organizer and Coordinator of a marine biological symposium (communication and signals in the marine environment).**

1994 - 1995: **Dutch Wadden Sea Society**, literature researcher on the effects of manmade noise on the behavior and functioning of marine animals in the Dutch Wadden Sea ecosystem.

1995 - 1996: **Underwater Biology Foundation, Groningen**, Course manager and supervisor of the Eastern Scheldt and lake Grevelingen course.

1995 - 1996: **Netherlands Institute for Sea Research, (NIOZ) Texel**, as researcher and co-worker on respiration rates of different *Echinodermata* within a European funded 4<sup>th</sup> framework program of the fishery research program (IMPACT II).

1996 – 1999: **Research assistant**, Department of Botany, Martin Ryan Institute. Strain selection and hybridisation of the edible brown seaweed *Alaria esculenta*.

2000–Present: **Manager, Irish Seaweed Centre**, Martin Ryan Institute, National University of Galway, Ireland

2001–Present: **National Seaweed Research Coordinator, Marine Institute**, Galway, Ireland

#### **Research Interests**

Taxonomy and phylogeny of algae, molecular systematics, seaweed cultivation, industrial applications of seaweeds.

#### **Particular Expertise**

Molecular techniques (DNA extraction, PCR, Sequencing and analysis), taxonomic expertise, chemical analysis of O<sub>2</sub>, N and P, Amino acids, protein, lipids and metals

#### **Membership of Learned Societies & Distinctions**

British Phycological Society

Comhairle Fó-Thuinn/Irish Underwater Council, Scientific officer

#### **Grants and funding**

Millennium Research Fund, NUI, Galway, 1998. £ 14,700  
15 months; Hybridisation of *Fucus* species from the west of Ireland: morphological, genetic and ecological studies

Marine Research Measure, 2000. £ 47,100  
27 months; Strain hybridisation field experiments and genetic fingerprinting of the edible brown seaweed *Alaria esculenta*

PADI Foundation, 2000. £ 3,700  
12 months; Alien seaweed introduction in Ireland: The present status of the distribution of *Asparagopsis armata*

Board Iascaigh Mhara - EU-PESCA programme, 2000. £ 13,500  
5 months; Nutritional and chemical analysis of the commercially viable sea vegetables for the Irish seaweed sector

HEA (2000); Environmental Science Institute, Marine Cluster £ 100,000  
24 months; Taxonomic and molecular identification of the Irish *Ulva* (sea lettuce) species complex: bio indicators of eutrophication.

EU/CRAFT (2000) £ 116,500  
24 months; A novel surfactant from safe and sustainable exploitation of seaweed (SEASURF)

Board Iascaigh Mhara – Pilot Aquaculture Scheme (2001) 12 months; The establishment of a pilot sized sea vegetable cultivation programme for the Roaring Water Bay Cooperative.	£ 48,000
Marine Institute (2001) 6 months; Seaweed Research Co-ordinator, Phase I.	£ 25,000
HEA (2001); Environmental Science Institute, Marine Cluster 36 months; Seaweeds as a novel, sustainable, organic supplement in fish feed for salmonid aquaculture	£ 306,000
IrishNewfoundland Partnership (2002) Agarum Cribrosum, a brown seaweed from New Foundland: a possible candidate for aquaculture?	€ 12,697
Marine RTDI (2002) Desk studies and Post Doctoral Fellowship Awards 36 months	€ 436,147
Marine Institute (2002) 24 months; Seaweed Research Co-ordinator, Phase II.	€ 115,213
Enterprise Ireland - Research Innovation Fund (2002) 24 months: Commercial cultivation of Carrageen Moss ( <i>Chondrus crispus</i> ); a novel species for aquaculture	€ 94,603
Marine Institute RTDI Technology Transfer (2003) Seaweed Display Atlantaquaria	€ 2,000
Heritage Council: Sargassum Bilateral cultural agreement travel bursary, Mexico	€ 7,750 € 3,500

### **Presentations**

*Irish Botanists' Meeting, University College Dublin, March 1998*  
Molecular characterisation and strain hybridisation in Atlantic and Pacific representatives of *Alaria* species (Laminariales; Phaeophyceae) (Oral presentation).  
Kraan, S. & Guiry, M.D.

Genetic comparison and hybridisation experiments of several strains of the brown alga *Alaria esculenta* (Laminariales; Phaeophyceae) from different geographic locations around the Irish coast. (Oral presentation).  
Verges A., Kraan, S. & Guiry, M.D.

*XI 7th International Seaweed Symposium, Cebu, Philippines 1998*  
Molecular characterisation and strain hybridisation in Atlantic and Pacific representatives of *Alaria* species (Laminariales; Phaeophyceae). (Oral presentation)  
Kraan, S. & Guiry, M.D.

*Year of the Ocean Conference, Dublin, 1998*  
Mapping and assessment of the seaweed resources (*Ascophyllum nodosum*, *Laminaria* spp.) off the west Coast of Ireland. (Oral presentation).  
Kraan, S., Kelly, L. & Guiry, M.D.

Strain selection in the edible brown seaweed *Alaria esculenta*; Phase I. Hybridisation studies under laboratory conditions. II. Strain hybridisation field experiments and genetic fingerprinting. (Poster)  
Kraan, S. & Guiry, M.D.

2<sup>nd</sup> European Phycological Congress, Montecatini, Italy; Sept. 1999

North Atlantic *Alaria esculenta* and *A. grandifolia* (Alariaceae, Phaeophyceae) are conspecific.  
Kraan, S., Rueness, J. & Guiry, M.D.

Seaweed Seminar, Cork, Ireland, 2000

Seaweed cultivation trials in Ireland to date (Oral presentation).  
Kraan, S.

XV 1<sup>st</sup> International Seaweed Symposium, Cape Town, South Africa 2001

Mariculture and strain hybridisation field trials of the edible brown kelp *Alaria esculenta*. (Oral presentation).  
Kraan, S & Guiry, M.D.

Marine Institute Divisional Information Meeting, Sept. 2001

The Irish Seaweed Industry: Historical overview and Research Priorities.  
Kraan, S.

1<sup>st</sup> Congress of the International Society for Applied Phycology & 9<sup>th</sup> International Conference on Applied Algalog, Almeria, Spain, May 2002

The Irish Seaweed Industry: historical overview and novel applications.  
Kraan, S. (Oral presentation).

C-MAR Fifth Aquaculture Workshop, Portaferry, Northern Ireland September 2002.

Recent developments in the Irish Seaweed Industry: Aquaculture and novel applications.  
Kraan, S. (Oral presentation).

Memorial University of Newfoundland, Marine Institute St John's Newfoundland April 2003

The Irish Seaweed Industry: Current research projects and novel applications  
Kraan, S. (Invited Lecture)

Memorial University of Newfoundland, Ocean Sciences Centre, St John's Newfoundland April 2003.

The Irish Seaweed Industry: An Historical Overview  
Kraan, S. (Invited Lecture)

Third European Phycological Congress, Belfast, Northern Ireland, Augustus 2003. Recent cultivation and application of marine macroalgae in Ireland. Kraan, S. (Oral Presentation).

## Publications

Kraan, S & Y.A.M. van Etten (1992). The (spawning) behaviour of *Sparisoma viride* on Bonaire and Saba. Saba Conservation News. Newsletter of the friends of the Saba Conservation Foundation. Vol 4 (3).

Kraan, S (1994). The effects of manmade noise on marine animals in the Dutch Wadden Sea. Report of the Dutch Wadden Sea Society, 1: 1-51.

Kraan, S. & Guiry, M. D. (1999). Seaweed cultivation. Seaweed Cultivation Explained poster series. Board Iascaigh Mhara.

Kraan, S. & Guiry, M. D. (1999). Growing a new sustainable sea-vegetable in Ireland. *The Irish Scientists Year Book*. 7: 128.

Kraan, S. & Guiry, M. D. (2000). Sexual hybridization experiments and phylogenetic relationships as inferred from Rubisco spacer sequences in the genus *Alaria* (Alariaceae, Phaeophyceae). *Journal of Phycology*, 35: 190-198.

Kraan, S. (2000). Nutritional and chemical analysis of the commercially viable sea

vegetables for the Irish Seaweed Sector. <http://www.seaweed.ie/isio>

Kraan, S., Verges Tramullas, A. & Guiry, M. D. (2000) The edible brown seaweed *Alaria esculenta* (Phaeophyceae, Laminariales): hybridisation, growth and genetic comparisons of six Irish populations. *Journal of Applied Phycology*, 12: 577-583.

Kraan, S. & Guiry, M. D. (2001). Molecular and morphological character inheritance in hybrids of *Alaria esculenta* and *A. pratense* (Alariaceae, Phaeophyceae). *Phycologia*, 39: 554-559.

Kraan, S., Rueness, J. & Guiry, M. D. (2001). Are North Atlantic *Alaria esculenta* and *A. grandifolia* (Alariaceae, Phaeophyceae) conspecific? *European Journal of Phycology*, 36: 35-42.

Kraan, S. & Guiry, M. D. (2001). Phase II: Strain hybridisation field experiments and genetic fingerprinting of the edible brown seaweed *Alaria esculenta*. Marine Resource Series. No 18. pp 1-33.

Kelly, L., Collier, L., Costello, M.J., Diver, M., McGarvey, S., Kraan, S., Morrissey, J., and Guiry, M.D. (2001). Impact assessment of hand and mechanical harvesting of *Ascophyllum nodosum* on regeneration and biodiversity. Marine Resource Series. No 19. pp 1-51.

Morrissey, J., Kraan, S. & M.D. Guiry (2001). A guide to commercially important seaweeds on the Irish coast. Published by the Irish Sea Fisheries Board, Dublin. 66 pp.

Kraan, S. (2003) [Http://www.Irishseaweed.com](http://www.Irishseaweed.com)

Werner, A. Clarke, C. & Kraan, S. (2003). Strategic review of the feasibility of seaweed aquaculture in Ireland. Marine Resource Series. In Press.

Kraan, S. 2003. Recent cultivation and application of marine macroalgae in Ireland. Third European Phycological Congress. *Eur. J. Phycol.* Programme and book of abstracts, p. 20. (Abstract)

Werner, A. & Kraan, S. (2004). Review of the potential mechanisation of kelp harvesting in Ireland. Marine Institute, in press.

## Referee

*Phycologia*, an internationally renowned journal of botanical sciences  
MarLIN www pages; database on marine life, Marine Biological Ass. UK, Plymouth

*Phycological Research*, Journal of the Japanese Society of Phycology

*Aquaculture International*, an internationally renowned journal of aquacultural sciences

*Journal of Phycology*; an internationally renowned journal of botanical sciences

## Other Activities and Skills

- Research diver; Diving certificate of the Dutch Underwater Association (N.O.B. 3<sup>rd</sup>) a member of the association of the Confédération Mondiale des Activités Subaquatiques (CMAS 3<sup>rd</sup>).
- Underwater photography and video.
- Drivers' license

## Personal Description

- Adaptable, determined, flexible, enthusiastic.

- Fluent in English (written and spoken).
- Some conversational German and Spanish.
- Independent and able to work in a team.
- Communicative and organizational skills.

**Leisure Activities**

Diving, Travelling, Photography (including underwater), reading science fiction literature  
Ice-skating, cycle-racing, Fishing (including sea), Salsa Dancing.